UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

EPA-SAB-EEC-LTR-93-009

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M St., S.W.
Washington, DC 20460

RE: SAB Review of OSWER/Office of Emergency and Remedial Response's draft Strategic Plan for Ground-Water Remediation at Superfund Sites

Dear Ms. Browner:

On March 3, 1993, the Superfund Ground Water Remediation Subcommittee of the Science Advisory Board's Environmental Engineering Committee reviewed the January 22, 1993, draft Strategic Plan for Ground-Water Remediation at Superfund Sites of the Office of Solid Waste and Emergency Response's Office of Emergency and Remedial Response (OERR).

While the Subcommittee commends OERR for undertaking this critical effort, it is reluctant to refer to the document as a "strategic plan" because it does not contain all the elements commonly contained in a strategic plan: a vision, an assessment of the current state of knowledge, and a pathway for moving from the current state to realization of the vision. Strategic planning processes can be flexible, but some of the basic tenets cannot be violated or the goals of the strategic planning process will not be met. Because such problems are often found in EPA strategic plans, the Environmental Engineering Committee is considering development of a separate commentary to address strategic planning generically.

The EPA should focus on why it developed the strategic plan and tailor the goal and objectives accordingly. It appeared to the Committee that the EPA collapsed issues and projects currently being acted on into the plan, and the Committee questions whether the plan is responsive to changes in the Superfund program, particularly SACM. There is a need to identify problems and their solutions within the program and it is suitable that this be an internal EPA action or planning process.

The Committee notes one additional difficulty with the strategy--the coupling of technology and policy in attempting to set priorities may frustrate the effort and weaken its credibility. While technical decisions may be altered by policy, it would seem prudent to separate these two issues to allow development of independent decisions, compare the outcomes, and then attempt some resolution.

The Subcommittee does agree with what it believes to be the main thrust of the document--that of encouraging development of methods suitable to a variety of clean-up scenarios. The plan recognizes that clean-up goals depend upon the human health and ecological risks included, technical treatability, costs, and values of various resources affected. The Subcommittee's response to the three questions of the charge follows.

Question 1. Will the four objectives of the Strategic Plan, given in Section II, lead to the stated goal of "improving the Superfund program's overall technical and policy approach to ground-water remediation and risk management?"

The Subcommittee believes that the objectives, as presented, are a good start for developing a plan, however, it may be appropriate to change them if the plan goal is restated in the process of developing a true strategic plan. As suggested above, such changes would separate policy and technical objectives while incorporating language that would reflect CERCLA and the National Contingency Plan. The goal should include a need for review and improvement of EPA's existing technical and policy guidelines to ensure that sites will be remediated in a timely and cost effective manner.

The Subcommittee notes that the second objective, "Improve communication of remedial objectives and progress, and increase program responsiveness to customers, including the public," is the least clear, appears to have the least commitment from the EPA, in terms of issue or project identification in the plan, and is an area of poor historical performance in the application of the program. Additionally, the Subcommittee suggests dispensing with the listing of issues by objective because allocation to a single objective is inappropriate for some issues and many projects address more than one objective. Finally, the Subcommittee suggests that EPA recognize the need to minimize delays in development of technical policy and guidance because some questions, such as technical impracticability, are being interpreted and applied at sites.

Question 2. Are there additional technical issues related to remediation of ground water that have not been identified in Section II of the plan?

The Subcommittee suggests that EPA provide a short explanatory paragraph for each issue that summarizes its implications, why it is considered to be a problem, and what are the likely solutions. The present list is merely a shorthand notation which is difficult to decipher by those unfamiliar with the EPA's plans or projects. It is also difficult to guess the intent of the EPA or the extent of the listed projects lacking specific descriptions. The Subcommittee believes that much research is needed in subsurface remediation--specifically, nonaqueous phase liquids (NAPL) and basic groundwater "purge and treat" technology problem areas in the Superfund Program.

The EPA document identified research issues for each of its four objectives. The Subcommittee both comments on and suggests some refinements to those issues

identfied by EPA. For some objectives, the Subcommittee also suggests some additional issues, as follows.

a) Objective 1: Improve decisions for clean-up and risk management of contaminated ground water.

Identification and availability of reliable methods for evaluating and selecting the best/applicable remedy for a site is a very important issue. Selection of an appropriate remedy for a given site should include evaluation of "natural attenuation (passive restoration)" versus "active restoration" technologies. No additional issues are suggested for this objective.

b) Objective 2: Improve communication of remedial objectives and progress, and increase program responsiveness to customers, especially the public.

As stated above, this objective and its issues are the least clear and appear to have the least commitment from the EPA in issue and project development. The EPA should develop better guidelines for the negotiations among potentially responsible parties (PRPs) and the EPA so that the differences can be reconciled and there can still be scientifically sound, technically adequate, cost-effective characterization and remediation plans. Although the Subcommittee suggests that the issues be clarified, it does not, at this time, suggest any additional issues for this objective.

c) Objective 3: Improve site characterizations and risk assessments, and better integrate investigations

The EPA needs to define more clearly easy-to-use criteria for choosing remediation technology on a site-specific basis. The Subcommittee suggests EPA consider some additional issues:

1) How can appropriate statistical methods be considered in data evaluation to minimize costs in site characterization?

2) How should each key factor be considered in determining a proper risk level

3) How can cost-effective field sampling/analysis methods be adopted or utilized so that both site evaluation and design/remediation are improved and accelerated?

d) Objective 4: Improve available remedial technologies and develop new or innovative technologies.

The Subcommittee suggests EPA consider some additional issues:

1) How can field performance of newly developed/tested remedial technologies be shared among all stakeholders and be considered by all remedial programs underway or in planning? (This may also be considered under Objective 2).

2) Which innovative remedial technologies need pilot testing and what are the general measurement requirements for their effectiveness or acceptability?

3) How could the Superfund Innovative Technology Evaluation (SITE) program application/approval be simplified so that testing of new remedial technology can be encouraged and brought into the program in a timely manner?

Question 3. Of the key issues listed under each objective in Section II, including those added by the SAB, what is the relative importance of each issue (preferably in numeric order where 1 is the most important)?.

The Subcommittee decided it should not respond to this request to rank the issues according to the objectives in the plan because it considers this the responsibility of the EPA. The Subcommittee believes that the criteria used by the EPA to decide priority may be as important as the final prioritization and that the criteria should be included in the plan. The following criteria were identified which might be useful to the EPA in developing criteria and refining its priorities:

a) Needs at each step/stage of a remedial program.
b) Requirements of the regulatory policies (in the order of importance).
c) Health and risk considerations.
d) Cost versus benefit considerations.
e) Result that may be derived from a issue and its level of achievability.
f) Time constraints on addressing the issue (e.g. schedule for reauthorization).
g) Proportion of sites affected by issue.
h) Technical or policy implications for the EPA programs (e.g. RCRA Corrective Action).
i) Legal implications.
j) Reduction in degree of scientific uncertainty.
k) Effect on reducing ambiguities or inconsistencies in current guidance.
l) Fairness.
m) Improvement in consistent treatment of public risks.
n) Public perception of an issue (is there high public or political pressure?).
o) Effect on improving timeliness of clean up.
p) Potential for multiple benefits (i.e. addresses more than one objective).

Another approach might be to look at key issues in terms of groupings such as those appropriate to technical understanding, policy, or economic considerations (or others of interest to the EPA). For example, under Objective 1, the technical understanding group would include issues a, b, and e; for a policy group, issues c and f; and for an economic issue group, b. Then it might be possible to rank the importance of these groupings rather than the issues themselves.

Conclusions

In summary, the Subcommittee is pleased that the EPA has attempted to develop a strategic plan for a critical national program with great economic impact. The Subcommittee is also pleased that the draft document incorporated many suggestions made in the October 1992 consultation and that the overall technical thrust of the document is appropriate to the complex situation of site cleanup. While the draft document was not yet a true strategic plan, the problems seen here are very common ones, and further clarification and refinement are needed. The Subcommittee has suggested some refinements and improvements which it hopes OSWER will incorporate into the revised document. We look forward to a written response concerning those refinements.

Sincerely yours,

Raymond C. Loehr, Chair
Science Advisory Board

Richard A. Conway, Chair
Environmental Engineering Committee

George F. Carpenter, Chairman
Superfund Ground Water Remediation Subcommittee

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